

IN THE CLAIMS

1. -20. (Canceled).

21. (Currently Amended) A method of managing a virtual private network over an internet, the method comprising:

providing a graphical user interface configured to display a list of switches, and for one of the switches, a menu of links, each link for accessing, via the internet, a web-page generated by a web-server associated with the switch offering virtual private network functions, each switch comprising a respective virtual private network element switch (VPN switch), wherein the list of VPN switches is displayed according to a hierarchical tree, each respective VPN switch comprising a node displayed on the hierarchical tree;

displaying a first selectable functionality in conjunction with the hierarchical tree, the first selectable functionality for instantiating a new physical VPN switch by adding a new node to the hierarchical tree;

displaying a second selectable functionality in conjunction with the hierarchical tree, the second selectable functionality for defining a network tunnel within the virtual private network element, wherein defining the network tunnel includes receiving a selection of a first extranet switch as a tunnel start point and a second extranet switch as a tunnel end point, the second selectable functionality allowing for at least one network subscriber access to the tunnel;
and

displaying a third selectable functionality in conjunction with the hierarchical tree, the third selectable functionality allowing for providing a view of at least one tunneling technology offered by a respective extranet switch.

22. (Previously Presented) The method of claim 21, wherein each of the links comprises an HTTP (HyperText Transfer Protocol) link.

23. (Previously Presented) The method of claim 21, wherein at least one of the links comprises a link to a web-page comprising information describing users of the virtual private network functions provided by the switch.

24. (Previously Presented) The method of claim 21, wherein at least one of the links comprises a link to a web-page comprising information describing packet filters provided by the switch.

25. (Previously Presented) The method of claim 21, wherein at least one of the links comprises a link to a web-page comprising information describing access hours of the switch.

26. (Previously Presented) The method of claim 21, further comprising:
transmitting an HTTP (HyperText Transfer Protocol) request when a link is selected by a user; and
accessing a web-page associated with the selected link in response to the HTTP request, the web-page comprising configuration information related to the switch.

27. (Previously Presented) The method of claim 26 comprising: modifying the configuration information of the switch via the accessed web-page.

28. (Currently Amended) The method of claim 21,
wherein each of the links correspond to a uniform resource locator (URL), and the graphical user interface prepares each URL by ~~prepending~~pretending an IP address of the switch to a predefined web-page location.

29. (Currently Amended) A method of managing a virtual private network, the method comprising
providing a graphical user interface display that includes:
a list of extranet switches offering virtual private network functions; and

-4-

a menu of HTTP links for an extranet switch selected from the list,
each HTTP link, when selected, causing transmission of an HTTP request to access a web-page generated by a web-server associated with the extranet switch, each switch comprising a respective virtual private network element switch (VPN switch), wherein the list of VPN switches is displayed according to a hierarchical tree, each respective VPN switch comprising a node displayed on the hierarchical tree;

displaying a first selectable functionality in conjunction with the hierarchical tree, the first selectable functionality for instantiating a new physical VPN switch by adding a new node to the hierarchical tree;

displaying a second selectable functionality in conjunction with the hierarchical tree, the second selectable functionality for defining a network tunnel within the virtual private network element, wherein defining the network tunnel includes receiving a selection of a first extranet switch as a tunnel start point and a second extranet switch as a tunnel end point, the second selectable functionality allowing for at least one network subscriber access to the tunnel;
and

displaying a third selectable functionality in conjunction with the hierarchical tree, the third selectable functionality allowing for providing a view of at least one tunneling technology offered by a respective extranet switch.

30. (Currently Amended) A system for managing a virtual private network, the system comprising:

- a processor; and
- a computer readable medium electronically coupled to the processor;
- a plurality of instructions wherein at least a portion of said plurality of instructions are storable in the computer readable medium, and further wherein the plurality of instructions are configured to cause the processor to perform the step of:

providing a graphical user interface configured to display a list of switches, and for one of the switches, a menu of links, each link for accessing, via the internet a web-page generated by a web-server associated with a the switch offering virtual private network functions, each switch comprising a respective virtual private network element switch (VPN switch), wherein the list of VPN switches is displayed according to a hierarchical tree, each respective VPN switch comprising a node displayed on the hierarchical tree;

displaying a first selectable functionality in conjunction with the hierarchical tree, the first selectable functionality for instantiating a new physical VPN switch by adding a new node to the hierarchical tree;

displaying a second selectable functionality in conjunction with the hierarchical tree, the second selectable functionality for defining a network tunnel within the virtual private network element, wherein defining the network tunnel includes receiving a selection of a first extranet switch as a tunnel start point and a second extranet switch as a tunnel end point, the second selectable functionality allowing for at least one network subscriber access to the tunnel;
and

displaying a third selectable functionality in conjunction with the hierarchical tree, the third selectable functionality allowing for providing a view of at least one tunneling technology offered by a respective extranet switch.

31. (Previously Presented) The system of claim 30, wherein each link comprises an HTTP (HyperText Transfer Protocol) link.

32. (Previously Presented) The system of claim 30, wherein at least one of the links comprises a link to a web-page comprising information describing users of the virtual private network functions provided by the switch.

33. (Previously Presented) The system of claim 30, wherein at least one of the links comprises a link to a web-page comprising information describing packet filters provided by the switch.

34. (Previously Presented) The system of claim 30, wherein at least one of the links comprises a link to a web-page comprising information describing access hours of the switch.

35. (Previously Presented) The system of claim 30, further comprising:
instructions for transmitting an HTTP (HyperText Transfer Protocol) request when a link is selected by a user; and instructions for accessing a web-page associated with the selected link in response to the HTTP request, the web-page comprising configuration information related to the switch.

36. (Previously Presented) The system of claim 35 further comprising:
instructions for allowing modification of the configuration information of the switch via the accessed web-page and for transmitting modified configuration information to the switch.

37. (Previously Presented) The system of claim 30, wherein each of the links correspond to a uniform resource locator (URL), and the graphical user interface prepares each URL by ~~prepending~~ pretending an IP address of the switch to a predefined web-page location.

38. (Currently Amended) A system for managing a virtual private network, the system
comprising:

a processor; and

a computer readable medium electronically coupled to the processor;

-7-

a plurality of instructions wherein at least a portion of said plurality of instructions are . storable in the computer readable medium, and further wherein the plurality of instructions are configured to cause the processor to provide a graphical user interface display that includes:

a list of extranet switches offering virtual private network functions; and

a menu of HTTP links for an extranet switch selected from the list. each HTTP link, when selected, causing transmission of an HTTP request to access a web-page generated by a web-server associated with the extranet switch, each switch comprising a respective virtual private network element switch (VPN switch), wherein the list of VPN switches is displayed according to a hierarchical tree, each respective VPN switch comprising a node displayed on the hierarchical tree;

displaying a first selectable functionality in conjunction with the hierarchical tree, the first selectable functionality for instantiating a new physical VPN switch by adding a new node to the hierarchical tree;

displaying a second selectable functionality in conjunction with the hierarchical tree, the second selectable functionality for defining a network tunnel within the virtual private network element, wherein defining the network tunnel includes receiving a selection of a first extranet switch as a tunnel start point and a second extranet switch as a tunnel end point, the second selectable functionality allowing for at least one network subscriber access to the tunnel;
and

displaying a third selectable functionality in conjunction with the hierarchical tree, the third selectable functionality allowing for providing a view of at least one tunneling technology offered by a respective extranet switch.

39. (Previously Presented) The method of claim 21, further comprising:

transmitting an HTTP (HyperText Transfer Protocol) request when the link is selected by a user;

accessing a web-page associated with the selected link in response to the HTTP request, the web-page comprising configuration information related to the switch, the configuration information including information describing users of the virtual private network functions provided by the switch; and

modifying at least a portion of the configuration information of the switch via the accessed web-page.